

BEFORE THE OFFICE OF THE COMMISSIONER OF RAILROADS

STATE OF WISCONSIN

On the Commissioner's Own Motion for a Determination of the Adequacy of Warning Devices at the Grade Crossing of the Wisconsin Central Ltd. Tracks with Honey Creek Road in the Town of Waterford, Racine County

9164-RX-556

FINDINGS OF FACT AND ORDER

On May 14, 2004, the Commissioner of Railroads directed the staff of the Office of the Commissioner of Railroads (OCR) to investigate the adequacy of warning devices under §195.28, Stats., at the grade crossing of the Wisconsin Central Ltd. (WCL) tracks with Honey Creek Road in the Town of Waterford, Racine County (Crossing No. 689 872V / MP 78.79).

Findings of Fact

THE COMMISSIONER FINDS:

Honey Creek Road is 22' wide in the vicinity of the crossing. It intersects the railroad tracks at an angle of 30° measured in the northwest quadrant. The roadway approach grades are approximately 2% ascending in both directions to the crossing. Honey Creek Road carried an average daily traffic (ADT) of 570 according to 2000 DOT records at a legal speed limit of 45 mph.

The WCL operates 30 train movements per day over the crossing at a timetable speed of 60 mph. The railroad also operates 2 switch movements each day. The crossing consists of one mainline track.

A driver traveling at 45 mph requires a safe stopping distance of 395'. The crossing is visible from greater than this distance in each direction. Assuming a train speed of 60 mph, a highway user traveling at 45 mph needs to see a train when it is 625' from the crossing from a point 395' down the highway. The sight distance available from the safe stopping distance is 200' in the northeast quadrant, 120' in the southeast quadrant, 50' in the southwest quadrant, and 50' in the northwest quadrant.

The exposure factor at this crossing is about 18,200. The exposure factor equals the product of the number of trains per day and the number of highway vehicles per day, which yields a numerical value for the potential conflicts each day at the crossing.

One train-vehicle accident has occurred at this crossing since 1973. That accident occurred in 2000 while the crossing was closed for construction.

The Wisconsin Department of Transportation has produced a benefit-cost analysis for all at-grade crossings in the state. Installing new automatic flashing lights with gates and constant warning time circuitry at the Honey Creek Road crossing has a net benefit of about \$788,000. The benefit-cost ratio is about 5.56 meaning that the public will receive \$5.56 in safety benefits for each dollar expended.

Accidents that do occur here will likely be quite serious if a through train is involved due to their 60 mph speed. Train speed is strongly correlated with fatalities in train/vehicle accidents. More specifically, crossings with train speeds of 40 mph and over have a disproportionate number of fatalities. According to Federal Railroad Administration (FRA) statistics, nationally, in 1994 71% of fatalities occurred at crossings with train speeds of 40 mph+, even though only 26% of all crossings had train speeds of 40 mph+.

The crossing is presently protected with 12" LED automatic flashing lights and advance warning signs. The LED lamps were added to the pre-existing equipment in 2000. The pre-existing equipment was installed in 1976. The existing warning devices are inadequate. The existing warning devices will be adequate until such time as the new warning devices are installed. In order to adequately protect public safety 12" LED automatic flashing lights with gates and constant warning time circuitry are needed based on the train volume, train speed, exposure factor, poor sight distance, and projected net benefit.

*Constant warning time circuitry* adjusts for train speed and causes the crossing signals to always operate for the same amount of time before the train reaches the crossing, regardless of train speed. A motion detector simply detects the train operation, but does not adjust for train speed so that the amount of warning time varies based on train speed.

*Light emitting diodes (LED)* are a relatively new application for crossing signals. The LED lamps replace the incandescent bulbs. LEDs have higher conspicuity, a wider cone of vision, and longer life than incandescent lights. LEDs are especially useful on east-west roadways where the rising and setting sun may make the signals difficult to see.

**Source of funding:** The signal materials and installation shall be paid from OCR safety funds.

#### Conclusion on the Issue

#### THE COMMISSIONER CONCLUDES:

That in order to adequately protect and promote public safety, it is necessary to install and maintain 12" LED automatic flashing lights with gates and constant warning time circuitry at the crossing of the tracks of RR with Honey Creek Road in the Town of Waterford, Racine County.

## Conclusion of Law

### THE COMMISSIONER CONCLUDES:

That the jurisdiction of the Office of the Commissioner of Railroads under §195.28, Stats., extends to this matter. Accordingly, the Office enters an order consistent with the findings of fact.

### Order

### THE COMMISSIONER ORDERS:

1. That the **Wisconsin Central Ltd.** shall install and maintain 12" LED automatic flashing lights with gates, and constant warning time circuitry with appropriate appurtenances in accordance with such plans as are filed with and approved by the Office of the Commissioner of Railroads at the crossing of its tracks with Honey Creek Road at-grade in the Town of Waterford, Racine County by **December 31, 2005** (Crossing No. 689 872V / MP 78.79).
2. That the **Wisconsin Central Ltd.** shall submit to the Office of the Commissioner of Railroads signal and circuit plans with the cost estimate of its proposed installation and upon completion of the signal project, a detailed statement of the actual cost to the Office and to the Wisconsin Department of Transportation.
3. That the signal installation work herein ordered shall not begin until the district office of the Wisconsin Department of Transportation informs the railroad that they may start such work and such start notice will not be issued until appropriate federal aid or other funding arrangements have been assured. The cost of the new project initiated before the start notice will not be reimbursed with public funds and shall be the responsibility of the railroad.
4. That to the extent feasible the **Wisconsin Central Ltd.** shall re-use the existing signal equipment.
5. That the **Wisconsin Central Ltd.** shall bear no part of the cost of the crossing signals installation, except for any cost assessed to the railroad pursuant to §195.60, Stats., for the investigation of this matter by the Office. The railroad shall not pass on those assessment costs either directly or indirectly.
6. That if the petitioner, railroad or any interested party objects to this order and requests a hearing within 20 days of the date of this order in writing, the Office will hold a public hearing.

7. That jurisdiction is retained.

Dated at Madison, Wisconsin, \_\_\_\_\_.

By the Office of the Commissioner of Railroads.

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Rodney W. Kreunen  
Commissioner of Railroads

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